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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MASUR, PAUL H	

ART UNIT	PAPER NUMBER
2464	

MAIL DATE	DELIVERY MODE
02/23/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,299	RIJPEKEMA, EDWIN	
	Examiner	Art Unit	
	Paul Masur	2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 11* is/are rejected.

7)☒ Claim(s) *3-10,12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 June 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. **Applicant's arguments, see page 9, filed 02/08/2010, with respect to the abstract have been fully considered and are persuasive.** The objection of the abstract has been withdrawn.

2. **Applicant's arguments, see page 10, filed 02/08/2010, with respect to the specification have been fully considered and are persuasive.** The objection of the specification has been withdrawn.

3. **Applicant's arguments see pages 10 and 11, filed 02/08/2010, with respect to claims 1, 2, and 11 have been fully considered and are persuasive.** The rejection of claims 1, 2, and 11 has been withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khan et al. (US Patent No. 7,206,280) in view of Donovan (US Patent No. 7,640,446), Hooper et al. (US PG Pub 2004/0052269), and Santiago et al. (US PG Pub 2006/0087969).

6. **As per claim 1,** Khan et al. teach a data processing circuit comprising:

a network (12) that is operable in successive time-slots [Kahn, column 2, lines 64-65, "One or more of the packets are transmitted during a time slot(s) assigned to a particular subscriber", Each subscriber is assigned time slots in a successive manner.];

a plurality of data processing units (10) interconnected by the network (12) [Khan, column 1, lines 32-35, "The air interface is used for the exchange of information between a mobile (e.g., cell phone) and a base station or other communication system equipment", Mobile phones act as data processing units that are connected through a wireless network.], and arranged to send streams of messages concurrently through the network (12) [Khan, column 1, lines 35-37, "The air interface comprises a plurality of communication channels. The quality of any one of the channels of the air interface varies", Many concurrent channels exist over the air interface.]...each particular stream being assigned a respective stream specific path along which the node circuits (22) forward all messages of the particular stream [Khan, column 1, lines 37-40, "any particular channel between the base station and a mobile may have an acceptable throughput at one instant and unacceptable throughput at another instant", Each communication stream between a processor and a base station are assigned to a particular stream.].

Khan et al. do not teach on an integrated circuit...each stream comprising messages that occupy shareable resources (20) in the network (12) in a periodically repeating selection of successive time-slots, a period of repetition (P) being the same for all the streams; node circuits (22) in the network (12), the node circuits (22) being arranged to forward the messages along multi-node paths through the network

(12)...the node circuits (22) being arranged to decide whether to forward or discard each message dependent on a measure of seniority of the message in its particular stream, each particular node circuit (22) being arranged to prevent forwarding of a more junior message in the particular stream for which insufficient resources (20) are left because of forwarding of a more senior message from another stream from the particular node circuit (22).

However, Donovan teaches on an integrated circuit [Donovan, column 1, lines 21-27, "Laptop computers, personal digital assistants (PDAs), and other mobile devices often incorporate wireless local area network (WLAN) technology that typically operates using battery power. Therefore, it is important to minimize power dissipation in mobile devices to preserve battery life. Sometimes WLAN circuits are implemented as a system-on-chip (SOC)"].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Donovan into Khan et al., since Khan et al. suggest a plurality of data processing units within a network that communicate via streams wirelessly, and Donovan suggests the beneficial use of a WLAN existing on an integrated circuit such as to save power dissipation [Donovan, column 1, lines 21-27] in the analogous art of network communications.

However, Hooper et al. teach each stream comprising messages that occupy shareable resources (20) in the network (12) in a periodically repeating selection of successive time-slots, a period of repetition (P) being the same for all the streams [Hooper, fig. 3B, paragraph 0034, "Referring now to FIG. 3B, schedule space (Item 50,

FIG. 3a) describes a finite amount of time divided into schedule slots (Item 52, FIG. 3a). The amount corresponds to a transmission cycle 51 that repeats with a regular period in time", The time slots periodically repeat according to a defined transmission cycle (or period).];

node circuits (22) in the network (12), the node circuits (22) being arranged to forward the messages along multi-node paths through the network (12) [Hooper, fig. 2, element 40, paragraph 0034, "the local behavior of the router/traffic shaper 40 in its capacity as a store-and-forward network device on network 46", A network contains many routers/traffic shapers.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Hooper et al. into Khan et al., since Khan et al. suggest a plurality of data processing units within a network that communicate via streams, and Hooper et al. suggest the beneficial use of successive time slots according to a period of repetition for each stream [Hooper, fig. 3B, paragraph 0034] in the analogous art of network communications.

Santiago et al. teach the node circuits (22) being arranged to decide whether to forward or discard each message dependent on a measure of seniority of the message in its particular stream, each particular node circuit (22) being arranged to prevent forwarding of a more junior message in the particular stream for which insufficient resources (20) are left because of forwarding of a more senior message from another stream from the particular node circuit (22) [Santiago, paragraph 0061, "The different subflows may be associated with different priority levels, so that some subflows have a

lesser likelihood of being discarded or being marked for discarding (or other traffic policing function) than other subflows of the same flow. Thus, during periods of high transfer rates from a flow, the allocation of remaining bandwidth for that flow will be biased towards packets associated to subflows of higher priority", Packets are assigned a priority level and are discarded according to that priority level when resources are low.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Santiago et al. into Khan et al., since Khan et al. suggest a plurality of data processing units within a network that communicate via streams, and Santiago et al. suggest the beneficial use of prioritizing streams of data such as to forward packets according to these priority levels [Santiago, paragraph 0061] in the analogous art of network communications.

7. **As per claim 2,** Khan et al. in view of Donovan, Hooper et al., and Santiago et al. teach a data processing circuit according to claim 1. Khan et al. further teach wherein at least one of the node circuits is arranged to send back a confirmation of successful forwarding of a message from an initial part of a particular stream up to said at least one of the node circuits, at least a further one of the node circuits (22) being arranged to forward a subsequent message from the particular stream only after timely reception of the confirmation [Khan, column 2, lines 66 & 67, column 3, lines 1-5, "If the decoding was successful (i.e., no errors detected or an acceptable number of errors detected), the receiving equipment transmits an ACK (ACKnowledge) message to the transmitting equipment indicating that the information was properly decoded and that a

new block of information can be transmitted", An acknowledgement is sent back to the sending node to indicate a successful transmission and that subsequent packets can be sent.].

8. **As per claim 11,** Khan et al. teach a method of processing data in a circuit that contains a plurality of data processing units (10) interconnected by a network (12) of node circuits (22), the node circuits (22) using successive time slots to forward messages along transmission paths between pairs of the data processing units (10), using resources (20) that the network (12) allows to be shared between different paths on a time slot multiplexing basis, the method comprising:

starting streams of messages, each from a respective source data processing unit (10a) to a respective destination data processing unit (10b) [Khan, column 1, lines 35-37, "The air interface comprises a plurality of communication channels. The quality of any one of the channels of the air interface varies", Many concurrent channels exist over the air interface.]...along the node circuits (22) in a stream specific path assigned to the particular stream [Khan, column 1, lines 37-40, "any particular channel between the base station and a mobile may have an acceptable throughput at one instant and unacceptable throughput at another instant", Each communication stream between a processor and a base station are assigned to a particular stream.].

Khan et al. do not teach on an integrated circuit...each stream comprising messages that occupy the resources in a periodically repeating selection of time-slots, the period of repetition being the same for all the streams; forwarding all the messages of the particular stream through the network (12)... the node circuits (22) deciding to

forward or discard each message dependent on a measure of seniority of the message in its particular stream, each particular node circuit (22) preventing forwarding of a more junior message for which insufficient resources are left because of forwarding of a more senior message from the particular node circuit.

However, Donovan teaches on an integrated circuit [Donovan, column 1, lines 21-27, "Laptop computers, personal digital assistants (PDAs), and other mobile devices often incorporate wireless local area network (WLAN) technology that typically operates using battery power. Therefore, it is important to minimize power dissipation in mobile devices to preserve battery life. Sometimes WLAN circuits are implemented as a system-on-chip (SOC)"].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Donovan into Khan et al., since Khan et al. suggest a plurality of data processing units within a network that communicate via streams wirelessly, and Donovan suggests the beneficial use of a WLAN existing on an integrated circuit such as to save power dissipation [Donovan, column 1, lines 21-27] in the analogous art of network communications.

However, Hooper et al. teach each stream comprising messages that occupy the resources in a periodically repeating selection of time-slots, the period of repetition being the same for all the streams [Hooper, fig. 3B, paragraph 0034, "Referring now to FIG. 3B, schedule space (Item 50, FIG. 3a) describes a finite amount of time divided into schedule slots (Item 52, FIG. 3a). The amount corresponds to a transmission cycle

51 that repeats with a regular period in time", The time slots periodically repeat according to a defined transmission cycle (or period).];

forwarding all the messages of the particular stream through the network (12) [Hooper, fig. 2, element 40, paragraph 0034, "the local behavior of the router/traffic shaper 40 in its capacity as a store-and-forward network device on network 46", A network contains many routers/traffic shapers.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Hooper et al. into Khan et al., since Khan et al. suggest a plurality of data processing units within a network that communicate via streams, and Hooper et al. suggest the beneficial use of successive time slots according to a period of repetition for each stream [Hooper, fig. 3B, paragraph 0034] in the analogous art of network communications.

Santiago et al. teach the node circuits (22) deciding to forward or discard each message dependent on a measure of seniority of the message in its particular stream, each particular node circuit (22) preventing forwarding of a more junior message for which insufficient resources are left because of forwarding of a more senior message from the particular node circuit [Santiago, paragraph 0061, "The different subflows may be associated with different priority levels, so that some subflows have a lesser likelihood of being discarded or being marked for discarding (or other traffic policing function) than other subflows of the same flow. Thus, during periods of high transfer rates from a flow, the allocation of remaining bandwidth for that flow will be biased

towards packets associated to subflows of higher priority", Packets are assigned a priority level and are discarded according to that priority level when resources are low.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Santiago et al. into Khan et al., since Khan et al. suggest a plurality of data processing units within a network that communicate via streams, and Santiago et al. suggest the beneficial use of prioritizing streams of data such as to forward packets according to these priority levels [Santiago, paragraph 0061] in the analogous art of network communications.

Allowable Subject Matter

9. Claims 3-10, 12, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. **The Examiner has cited particular columns and line numbers or paragraphs in the references applied to the claims above for the convenience of the applicant.** Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, the Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

11. **If the Applicant is of the opinion that an interview would help advance prosecution in this case, they are welcome to call the Examiner, Paul Masur, at the number listed below to schedule an interview.** The Examiner prefers interview requests be accompanied with a detailed agenda via fax. The Examiner's fax number is (571) 270-8297. The Examiner is willing to consider proposed amendments, clarify rejections, and discuss any other issues that are presented by the Applicant. Please note that the Examiner may not be able to accommodate all requests due to scheduling constraints. It is recommended that interview requests be sent with ample time to schedule an interview.

12. **Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Masur whose telephone number is (571) 270-7297.** The examiner can normally be reached on Monday through Friday from 7:00AM to 4:30PM (Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2464

/P. M./
Examiner, Art Unit 2464